



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/816,031 | 03/31/2004 | Louis A. Lippincott | ITL1713US (P18841) | 9305 |
| 21906 7590 02/18/2010 TROP, PRUNER & HU, P.C. 1616 S. VOSS ROAD, SUITE 750 HOUSTON, TX 77057-2631 | | | | |
| EXAMINER | | | | |
| MARANDI, JAMES R | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 2421 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 02/18/2010 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/816,031

Applicant(s)

LIPPINCOTT, LOUIS A.

Examiner

JAMES R. MARANDI

Art Unit

2421

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 8 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, 24-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/5/2010 has been entered.

Response to Amendment

2. This action is in response to applicant's amendment filed on 2/5/2010. Claims 1-5, 7, 8, and 24- 27 are presently pending. Claims 6, and 9- 23 have been cancelled.

Response to Arguments

3. Applicant's arguments with respect to claims 1 and 24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-5, 7, 8, and 24- 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul Moroney, USPN 6,532,593 (herein after "Moroney") in view of Nicola John Fedele, USPN 5,920,354 (hereinafter "Fedele"), further in view of J. Youn et al., "Motion Vector Refinement for High-Performance Transcoding", IEEE Transactions on Multimedia, Vol. 1, No. 1, March 1999, (hereinafter "Youn").
6. Regarding claim 1, Moroney discloses a **system, comprising:**

a decoder to decode encoded video information having a first format (Fig. 2, 210) into intermediate video information and to extract motion vectors from the encoded video information (Motion Vectors-MV- are extracted at 115 and sent to 135 and 194), see background information in Col. 4 line 6- Col. 5, line 9, and further detail of Fig. 2 operation in Col. 5, line 10 through Col. 6, line 26.;

a compression block (250) to encode the digital data into output video information having a second format using the motion vectors extracted from

the encoded video information (Motion Vectors –MV- are supplied and used in 194 of compression block 250); **and**

a device to store the output video information from the compression block (Fig. 4, 470; Col. 6, line 50 through Col. 7, line 33).

Moroney does not disclose

a digital to analog converter to convert said intermediate format to analog data; **and**

an analog to digital converter to convert said analog data to digital data;

However, Fedele discloses:

a digital to analog converter to convert said intermediate format to analog data (Fig. 1, the digital data form 110 is converted by 120 to analog YIQ; Col. 3, lines 10- 15); **and**

an analog to digital converter (150) to convert said analog data to digital data (Digital NTSC Interface, Col.3, lines 15- 23);

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Moroney with Fedele's invention in order to have an analog intermediary signal to be supplied to analog receivers and offer transcoding possibilities for a variety of video formats.

Moroney discloses reuse of the motion vectors in order to reduce the complexity of full motion estimation and thereby reduce the cost of the cascaded transcoders (decoder/encoder), as in Col. 4, lines 60 through Col. 5, line 9.

The system of Moroney and Fedele is silent on said compression block to **compensate for errors, introduced by the digital-to-analog (D/A) and analog-to digital (A/D) converters, by performing a localized motion search.**

However, Youn discloses that incoming motion vectors may become non-optimal due to reconstruction errors (**D/A and A/D conversion**). See Page 30, Abstract. Youn further discloses that by reusing the motion vectors the complexity of the transcoders is reduced (Page 30, 2nd column, next to last paragraph). Youn further discloses the possibility of quality degradation due to reuse of motion vectors, and therefore proposes a fast search adaptive motion vector refinement (Page 31, 1st column, 1st paragraph). Such search is based on a predefined (**localized**) **motion search** window S (Page 31, Section II, where as shown in equations 1 and 2, the search is limited to current and previous frames).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Moroney and Fedele with Youn's teaching in order to improve the quality of transcoding while maintaining low cost of the transcoders.

6.1. Regarding claim 2, **wherein the first format and the second format have a common format**, see Moroney Col 5, lines 13- 24.

6.2. Regarding claim 3, **wherein the common format includes MPEG-1, MPEG-2, MPEG-4, H.264, Windows Media Video version 9 (WMV9) or Advanced Video System (AVS)**; Moroney discloses transcoding from one format to another and provides examples such as HD TV to SD TV, or MPEG-1 to MPEG-2 (Col. 3, lines 26-35). Fedele's disclosure further offers examples such as HDTV to HDTV (Table 1), HDTV to NTSC, PAL etc. Inclusion of other formats were notoriously well known to those of ordinary skill in the art, as further demonstrated by A.C.W. Lai et al., USPGPUB 2002/0190876, ¶¶ [8] and [63], and tables 2-5.

6.3. Claim 4 is rejected by the same analysis as claim 3.

6.4. Regarding claim 5, **wherein the decoder is arranged to extract quantization data, picture data, or error data from the encoded video information**, see Col. 3, lines 58-62, Fig. 2, Col. 5, lines 13- 18) .

6.5. Regarding claim 7, **wherein the intermediate video information includes digital pixel information**, Moroney discloses in Fig. 2 that the digital pixel information is provided to adder 130 and upon further processing output to 160 (Col. 4, lines 15- 44).

6.6. Regarding claim 8, Moroney does not explicitly disclose **including: an output port to output the intermediate video information**. However, Fedele discloses the intermediate analog signal (between 120 and 150 in Fig. 1) to be of YIQ format.

Therefore, it would have been obvious to one of ordinary skill in the art to modify the system of Moroney with Fedele's invention in order to provide an intermediate display for monitoring of intermediate signal information.

7. Regarding claim 24, Moroney discloses **a method, comprising:**
obtaining at least motion vectors from an encoded video stream (Fig. 2, decoder section 210, MVs are extracted at 115); and

decoding the encoded video stream to generate a decoded digital video
intermediate video stream (the stream moving between decoder 110, element 130,
and encoder 150, element 160)

encoding the second digital video stream to generate an output video
stream using the motion vectors obtained from the encoded video stream
(Motion Vectors –MV- are supplied and used in 194 of compression block 250);

Moroney does not disclose

converting the decoded digital video stream to an analog video stream;
and

converting the analog video stream to a second digital video stream;

However, Fedele discloses:

converting the decoded digital video stream to an analog video stream;
(Fig. 1, the digital data form 110 is converted by 120 to analog YIQ; Col. 3, lines 10-
15); and

converting the analog video stream to a second digital video stream
(Digital NTSC Interface, Col.3, lines 15- 23);

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of
invention, to modify the system of Moroney with Fedele's invention in order to have
an analog intermediary signal to be supplied to analog receivers and offer

transcoding possibilities for a variety of video formats.

Moroney discloses reuse of the motion vectors in order to reduce the complexity of full motion estimation and thereby reduce the cost of the cascaded transcoders (decoder/encoder), as in Col. 4, lines 60 through Col. 5, line 9.

The system of Moroney and Fedele is silent on said compression block **compensating for errors introduced by the digital-to-analog (D/A) and analog-to digital (A/D) conversion by performing a localized motion search of the second digital video stream.**

However, Youn discloses that incoming motion vectors may become non-optimal due to reconstruction errors (**D/A and A/D conversion**). See Page 30, Abstract. Youn further discloses that by reusing the motion vectors the complexity of the transcoders is reduced (Page 30, 2nd column, next to last paragraph). Youn further discloses the possibility of quality degradation due to reuse of motion vectors, and therefore proposes a fast search adaptive motion vector refinement (Page 31, 1st column, 1st paragraph) to **compensate for errors introduced** during reconstruction process (**D/A and A/D conversion**). Such search is based on a predefined (**localized**) motion search window S (Page 31. Section II, where as shown in equations 1 and 2, the search is limited to current and previous frames).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of invention, to modify the system of Moroney and Fedele with Youn's teaching in order to improve the quality of transcoding while maintaining low cost of the transcoders.

7.1. Regarding claim 25, **wherein the obtaining further includes obtaining quantization data and picture data from the encoded video stream,**

Moroney discloses that picture data, including quantization, is obtained at 115 (Fig. 2); also see Col. 4 line 6- Col. 5, line 23 .

7.2. Regarding claim 26, **controlling a rate of the encoding using the quantization data and the picture data,** picture information from 115 is

supplied to encoder/compressor section 250 at 194 via link 220. Also see Col. 4 line 6- Col. 5, line 23.

7.3. Regarding claim 27, **storing the output video stream,** Fig. 4 ,the output of transcoder 427 is stored at 470; Col. 7, lines 3- 33.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES R. MARANDI whose telephone number is (571)270-1843. The examiner can normally be reached on 8:00 AM- 5:00 PM M-F, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John W. Miller/
Supervisory Patent Examiner, Art Unit 2421

/James R. Marandi/
Examiner, Art Unit 2421